

**De Haas-van Alphen Effect in the Filled Skutterudite CeRu<sub>4</sub>Sb<sub>12</sub> \***

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Ternary intermetallic compounds RT<sub>4</sub>X<sub>12</sub> (R = rare earth; T = Fe, Ru, and Os; X = P, As, and Sb) with the filled skutterudite structure show a rich variety of the electrical and magnetic properties depending on the rare earth R. Among them, CeRu<sub>4</sub>Sb<sub>12</sub> is reported to show no magnetic order but non-Fermi-liquid anomalies at low temperatures. We have succeeded in observing the de Haas-van Alphen effect in CeRu<sub>4</sub>Sb<sub>12</sub> for the first time. The Fermi surface topology is found to be different from that in LaRu<sub>4</sub>Sb<sub>12</sub>, suggesting the strong *c-f* hybridization or the itinerant nature of 4*f*-electrons. The cyclotron effective mass  $m_c^*$  is found to be enhanced  $m_c^* = 4.6\text{-}5.8 m_0$  indicating a strong correlation in this compound. CeRu<sub>4</sub>Sb<sub>12</sub> is mostly like semimetal, considering this compound is a metallic whereas most of the other Ce-based filled skutterudites show semiconductor-like behaviors. From a comparison between the Sommerfeld coefficient ( $\sim 100\text{mJ/K}^2\cdot\text{mol}$ ) and  $m_c^*$ , the existence of another Fermi surface sheet with large effective mass of  $m_c^* \sim 50 m_0$  is expected.

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